

Manu Madhavan
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Department of Computer Science and Engineering
Indian Institute of Information Technology Kottayam

RESUME

Areas of Interest

Bioinformatics, Computational Linguistics, NLP, Machine Learning

Research

My area of research is Bioinformatics, focusing on RNA Bioinformatics and disease association. This also involves applications of data-mining, NLP and machine learning in Biological data. I did research under Dr. G Gopakumar, Assistant Professor, CSED, NIT-Calicut.

Education

- PhD - [Department of Computer Science and Engineering, NIT- Calicut](#)- Dec 2015-Mar 2021
- M.Tech Computational Linguistics, [Govt. Engineering College](#), Palakkad, 2011-13
- B.Tech Computer Science and Engineering, [Nehru College of Engineering and Research Center](#), Pampady, Thrissur-, 2006-10.
- Higher Secondary- Govt. S.M.T.G.H.S.S, Chelakkara, 2004-06
- SSLC- St. Joseph's High School, Pangarappilly, Chelakkara, 2004.

Experience

- Indian Institute of Information Technology Kottayam, [Jul 2022-Present], Assistant Professor, Department of Computer Science and Engineering.
- Amrita Vishwa Vidyapeetham, Coimbatore [Mar 2020-Jul 2022]- Assistant Professor, Department of Computer Science and Engineering, Amrita School of Computing, handled courses NLP, Bioinformatics, Machine Learning for both UG and PG.
- Sreepathy Institute of Management and Technology, Palakkad, Kerala[Aug-2013 -Dec 2015]. Assistant Professor, Dept. of Computer Science and Engineering, and handled courses on Algorithms, Information Retrieval, System Programming, Introduction to Computing and Problem Solving (Python) at the Undergraduate level. Guided B. Tech projects in NLP area.
- Govt. Engineering College, Sreekrishnapuram, Palakkad, Kerala[Oct-2011- Jul 2013] Teaching Assistant in Dept. of Computer Science, for undergraduate course in Computer Programming in C, Compiler Lab and Soft Computing.
- Sreepathy Institute of Management and Technology, Palakkad, Kerala[Dec-2010 to Aug-2011]. Lecturer in Dept. of Computer Science and Engineering, and handled courses on Data structures, Programming Paradigms, and C Programming at Undergraduate level.

Publications

1. Manu Madhavan, Reshma Stephen, Gopakumar G. 2020. Prediction of lncRNA Cancer association using Topic Models on Graph, MoSICom 2020, BITS Pilani, Dubai Campus, Jan 29-31, 2020.
2. Sreeshma M, Madhavan M, Gopakumar G. 2018. [Identification of lncRNAs from inherent features using machine learning techniques](#), 26 October. (IEEE) Int Conference on Bioinformatics and System Biology (BSB2018). , IIIT Allahabad.
3. Madhavan, M, Gopalakrishnan G. 2018. [An Effective Sequence Structure Representation for Long Non-Coding RNA Identification and Cancer Association using Machine Learning Methods](#). ACM Applied Computing Review. 18(3):49-58.
4. Manu Madhavan, Gopakumar G. 2018. [A tf-idf based Topic Model for identifying lncRNAs from genomic background](#). The 33rd ACM/SIGAPP Symposium On Applied Computing. :38-44., Pau, France: ACM,
5. Manu Madhavan, Robert Jesuraj, Reghu Raj P C, " **Design of Scalable Natural Language Report Management System**", in short proceedings of Int. Conf. on NLP (ICON) , Delhi, 2013. [Selected for upload on TDIL-DC portal].
6. Manu Madhavan, Mujeeb Rehman O, Dr. P. C Reghu Raj, " **Computing Prosodic Patterns for Malayalam**", in proceeding of National Conference on Indian Language Computing, CUSAT, India, 2013. Also published in CSI Digital Resource Center <http://csidl.org/xmlui/handle/123456789/543>
7. Manu Madhavan, Dr. P. C Reghu Raj, " **Application of Karaka Relations in Natural Language Generation** ", in the proceedings of National Conference on Indian Language Computing, CUSAT, India, 2012.

Projects

- "Scalable Natural Language Report Management System: using Distributed IE and NLG from Ontology", at Centre for Artificial Intelligence and Robotics (CAIR), DRDO Bangalore.(Master Thesis)
- Database Generator-(D-Gen) (B.Tech Main Project)
- Graphic Illustrator (B.Tech Mini Project)

Online Courses

- Python for Data Structures and Algorithms (NPTEL)
- Data Science R basics, HarvardX (edX)
- Neural Networks and Deep Learning, deeplearning.ai (Coursera)
- Mathematics for Machine Learning - Linear Algebra, Imperial College, London (Coursera)
- Effective Engineering Teaching in Practice, IIT Madras, NPTEL
- Practical Machine Learning using Tensorflow 2.0, IIT Madras and Google, NPTEL
- Deep Learning- Part 2, IIT Madras, NPTEL

- Deep Learning, IIT Madras, NPTEL
- Web Intelligence and Big Data, Coursera (IIT- Delhi)
- Python Programming, Alison Learning

Conferences and Workshops

- **AICTE** Sponsored FDP on **Machine Learning for NLP and IoT**, organized by IIT Roorkee, 22-26, Jan 2021.
- **AICTE** sponsored FDP on **Computational Thinking in India**, organized by IIT Roorkee, 16-21 Jan, 2021
- **Webinar on e-learning content preparation** organized by CSI Chennai, on 23 Jun 2020.
- **FDP on Foundations of Data Science**, organized by Dept of CSE, GED Wayanad from 11-13, Dec 2019
- **International Conference on Bioinformatics and System Biology (BSB 2018)**, Organized by IIIT-Allahabad, Oct 26-28, 2018
- **GIAN course on Text and Data Mining in Bioinformatics**, Department of CSE, NIT Calicut, from Sep 10-14, 2018.
- **Visvesvaraya PhD Programme Presentation & Evaluation Research Workshop**, Andhra University, Visakhapatnam, 16-18, November, 2017.
- **National Level Workshop on Applied Data Science and Analytics using R**, organized by School of Management Studies, NITC, Mar 12-17, 2017.
- **FDP on High Performance Computing- Latest Trends and Application**, organized by Dept. of CSE, Chemistry and Physics, NITC, From Mar 9-11, 2017.
- **FDP on Big Data Analytics Tools and Techniques**, organized by Dept. of CSE, NIT Calicut, Feb 27 to Mar-4, 2017.
- [MSR India Academic Research Summit 2017](#), organized by Microsoft Research India and ACM, at IISc, Bangalore.
- “Exploring Gene Expression data using NGS and Microarray”, RGCB, Thiruvananthapuram, 18-20, April, 2016.
- One day workshop on Python Programming, FISAT, Angamaly, July, 2015
- “Swatantra-2014”, Int. Conference on FOSS, Thiruvananthapuram, Dec 2014
- 3 Day FDP organized by ICT Academy, at Sreepathy Institute of Management and Technology, Nov 2014.
- STTP on Android Application Development, GEC, Palakkad, (10-14 November 2014)
- National Conference on Indian language Computing, CUSAT, 2013.
- Computational Linguistics and Machine Translation Workshop, Amrita University (Coimbatore), 2012
- STTP on Stochastic Process, GEC, Thrissur, 2012

- 4th-IASNLP Workshop on Natural Language Processing, organized by IIIT-Hyderabad, 2012.
- ISTE- workshop on Introduction to Research Methodology, organized by IIT-Bombay, Palakkad, 2012.
- National Conference on Indian language Computing, CUSAT, 2012.
- National Technological Congress-2011, GEC, Thrissur

Presentations and Lectures

- **An invitation to Computational Linguistics**, Winter School: Mathematics, Computer Science & Information Technology organized by the UGC- Human Resource Development Centre, Kannur University, Kerala, 03 March 2021.
- **Introduction to Natural Language Processing**, Invited talk organized by MIROSI, March 2, 2021
- **Introduction to Artificial Intelligence**, webinar organized by Department of CS, Govt. College Thalassery, 16 Feb 2021
- **"Discrete and Hidden Markov Models in Machine Learning"**, visiting lecture scheme, at College of Engineering Perumon, 05 Dec 2020.
- **"Introduction to Python Programming"**, TEQIP sponsored student training programme, organized by Dept of ECE, GEC Idukki.
- **"Python for Machine Learning"**, Hands on session as part of ATAL FDP, organized by College of Engineering Kidangoor, 27,28 Aug 2020.
- **"Research Avenues in NLP"**, as part of FDP conducted by Dept of CSE, Christ College of Engineering, Iringalakkuda, 27 July 2020
- **"Building Machine Learning Applications using Google Colab"**, webinar organized by Dept of CSE, College of Engineering Kidangoor, on 20 July 2020.
- **Deep Learning for NLP**, webinar organized by Dept. of CSE, LBS College of Engg, Kasargode on 7 Jul 2020.
- **ANN using Python**, lab session as part of FDP on Deep Learning using Python, organized by Dept of Electronics and Instrumentation, GEC Calicut, on 16 Jan 2020.
- **Using Python to Evaluate Machine Learning Algorithms**, FDP on Theory and Practice of Machine Learning, as part of TRISCCON 2020, organized by GEC Barton Hill and IIST, Thiruvananthapuram on 15 Jan 2020.
- **Workshop on Moodle- an open source course management system**, organized by ISTE, IQAC and IEDC Sreepathy Institute of Management and Technology Vavanoor, Palakkad on 16 Dec 2019.
- **Python for Machine Learning** as part of FDP on Machine Learning and Deep Learning, organized by Dept of EEE, NIT Calicut.
- **Two day Workshop on Practical Machine Learning** at the College of Engineering Kidangoor, Kottayam, on 2-3, Oct- 2019.

- **“Python for Datascience”**, in KTU Sponsored FDP on Theory and Practice of Data Science, Jyothy College of Engineering, Cheruthuruthy, Thrissur, Jun 28, 2019.
- **Workshop on Python for Machine Learning**, Christ College of Engineering, Irinjalakuda, Feb 20, 2019.
- A talk on **“Digital Reach- Social media, Society and Youth”**, in à la vérité 2019, An Annual seminar on contemporary topics organized by Kerala Educational Cell, Thrissur, Feb 17, 2019.
- **“Two Day Workshop on Text Analysis using Python”**- as part of IEEE Malabar Hub Meet, NSSCE, Palakkad, 28-29 July, 2018.
- **“Practical Machine Learning using Python”**- in FDP on AI and Machine Learning using Python and R, Mohandas College of Engineering, Thiruvananthapuram, Jul 19, 2018
- **“Python for Data Analysis”**, in FDP on Security and Privacy in Big Data Analytics organized by Dept. of Computer Science and Engineering, NIT Calicut, June 20, 2018.
- **“Descriptive Statistics with Python-Numpy”**, In FDP on Statistics and Computing using R and Python, Govt Arts and Science College, Calicut, Dec 6, 2017.
- **“Introduction to Python”**, Visiting Faculty Programme for 3rd Semester B. Tech EEE, Govt. Engineering College, Sreekrishnapuram, Palakkad, Nov 6, 2017.
- **“Lets Pythonize it!!”**- One day Python workshop for first year B.Tech, Thejus Engineering College, Erumapetty, Thrissur, Oct 7, 2017.
- **“Python Application Development”**, One day workshop at Ammini College of Engineering, Palakkad, Jul 11, 2017.
- **“Python for Data Analysis”**, Tutorial session in FDP on Big Data Analytics- Tools and Techniques, Organized by CSED, NITC, Mar 2, 2017.
- **One Day workshop on Introduction to Machine Learning and Data Science**, Organized by the Dept. of Computer Science and Engineering, NSS College of Engineering, Palakkad, 20-Jan-2017 (With [Robert Jesuraj](#)).
- **“Introduction to Machine Learning and Data Science”**, Organized by IEDC- Sreepathy Institute of Management and Technology, Vavanoor, 5-Nov-2016.
- **“CLIP- Computational Linguistics from Industrial Perspective”**, Govt. Engineering College, Palakkad (Sponsored by TEQIP), 01-Oct- 2016 (with Robert Jesuraj, Sreejith C and Gopalakrishnan)
- **“Python for NLP”**- Hands on training as Part of FDP on Speech and Text Processing, LBS Institute of Technology for Women, Thiruvananthapuram, Aug, 2016 (With [Robert Jesuraj](#))
- **“Rhythm of Life”**, SIMAT-NSS Special Camp, Karukaputhur, Palakkad, Dec, 2015
- **Workshop on LaTeX**, organized by ISTE Chapter, Sreepathy Institute of Management and Technology, Vavanoor, 17-Jan, 2015.
- **“Semantic Web Technologies”**- FDP on Scope of Research in NLP, CE, Vadakara, Oct 2014.
- **“Introduction to Openoffice Calc”**, Workshop on Introduction to E-World, GEC, Palakkad, 2014.

- **“Semantic Web Technologies”**, Workshop on Multilingual Computing, GEC, Palakkad, Oct, 2013

Roles and Responsibilities

- Student Coordinator, **Smart India Hackathon 2019**, March 02-03, 2019.
- Volunteer, GIAN course on Data and Text Mining in Bioinformatics (by Prof. Mathew J Palakal, IUPUI) CSED, NITC, Sept, 2018
- Volunteer, FDP on Big Data Tools and Techniques, CSED, NITC, 2017
- System Administrator, Sreepathy Institute of Management and Technology (2015)
- Coordinator of E-Literacy Program for school students of Nagalassery Panchayat, conducted under SREE PRASADAM- social outreach program from Sreepathy
- Project intern at CAIR, DRDO, Bangalore for 6 months and worked under project **“Scalable Natural Language Report Management System”**, as part of Master Research Project.
- Representative of SIMPLE groups(www.simplegroups.in) SIMPLE groups is Students’ Innovation in Morphology, Phonology and Language Engineering. A group that is pioneering in Language Processing at Government Engineering College Palakkad.
- Editor of “Computational Linguistics in Engineering and Research (CLEAR) Magazine”, a publication from Government Engineering College, Sreekrishnapuram, Palakkad.
- Co-ordinated different association activities as the Secretary, during 2009-10, at Nehru College.
- Worked as the Editor of both Technical and literary magazine of Nehru College, 2009-10

References

1. **Dr. P. C Reghu Raj**
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2. **Dr. G. Gopakumar**
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